

# **Current Status of Cost Pressures on Teacher Salaries in Wyoming**

**Report to the  
Joint Appropriations Committee and  
the Joint Education Committee**

**September 2022**

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## Overview of Cost Indicators

The 2011 to 2021 reports “Cost Pressures on Teacher Salaries in Wyoming” included metrics for monitoring changes in cost pressures on teaching salaries. This report updates the most salient of these metrics to identify pressures related to labor market trends, demographic patterns, and teacher turnover. The indicators are summarized in Table 1. Details about each metric and figures reporting longer term trends follow.

### SUMMARY

- **Teaching wages in Wyoming remain high relative to other Wyoming occupations**, at 87 percent of wages of other professional and technical workers. The United States (U.S.) average and average in neighboring states and North Dakota remained close to 75 percent. **The ratio in Wyoming has consistently eroded over the last several years**, although the 2021 ratio is above the 2020 low of 85 percent.
- According to National Education Association (NEA) and U.S. Department of Education’s National Center for Education Statistics (NCES) data, **teaching salaries in Wyoming have remained flat over the past several years**. In adjacent states and the U.S. as a whole, the increase in teaching salaries has been larger, at 1- 2 percent per year.
- Wages in Wyoming are 10 percent higher than in adjacent states and North Dakota. Wyoming’s advantage relative to the region has fallen in recent years relative to the high over the last 10 years of 21 percent. **Model salaries now lie 3 percent below the average salary in the region**.
- **Wyoming continues to recruit more than half new teachers from other states**, although the percentage has fallen since 2011 and is now barely above half.
- The University of Wyoming reported a decline in the number of BA teaching degrees from 2010, but this has stabilized in the last 5 years. Trends are similar to other states.
- The ratio of individuals who take the teaching certification exams relative to the number of new teaching program completers is lower in Wyoming than in all other states in the region.
- **Student enrollment growth is relatively flat**, with growth rates averaging less than 1 percent over the past ten years. Enrollment is predicted to decline slightly through 2030.
- The number of teachers ages 60 and above is about 7 percent, the low point in many years.
- **The fraction of new hires is 10.4 percent**, similar to average over the last 10 years.
- **Exit rates for teachers is at 11.4 percent, slightly above the average rate of 10.1 percent**. The exit rates for new and middle experienced teachers remains relatively constant, but older teachers had a jump in exit rates in the last year.

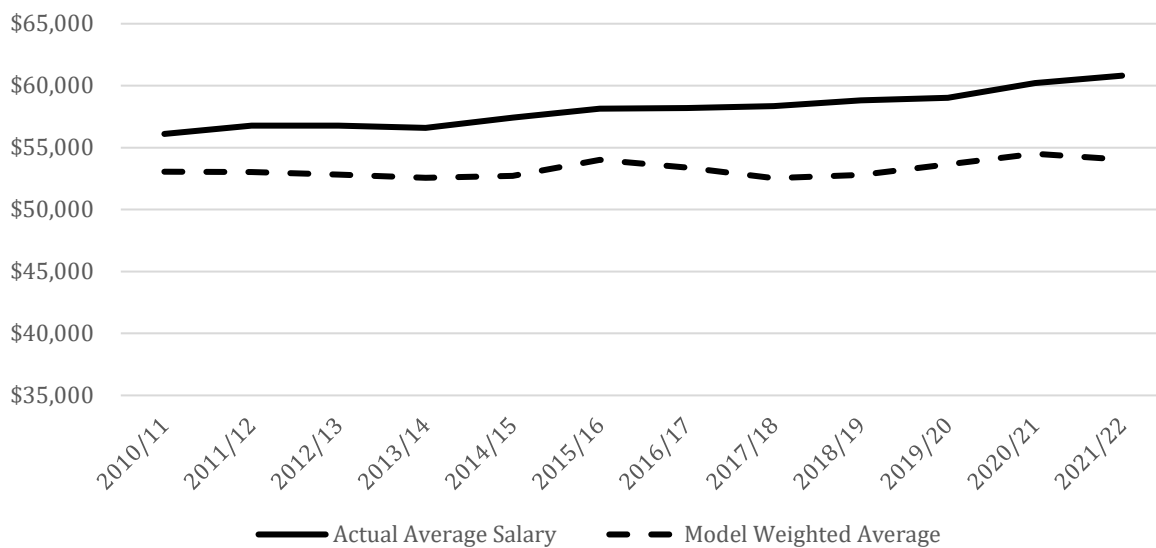
**Table 1: Summary of Indicators of Cost Pressure Sources**

	<b>Current Status</b>	<b>Previous Year</b>	<b>10 Year Range And Average</b>
Average Teaching Wages, 2020/21 OEWS data	\$62,750	\$60,650	\$58,380-62,750 Average = \$59,636
Average Teaching Wages, 2021/22 NEA data	\$60,820	\$60,234	\$56,775-60,820 Average = \$58,515
Ratio of teaching wages to other professional/technical occupation wages in WY, 2020/21 OES data	.87	.85	.85 – .97 Average = .89
Ratio of teaching wages to other professional/technical occupation wages in adjacent states, 2020/21 OEWS data	.74	.74	.74 – .76 Average = .75
Ratio of WY average teaching salaries to average teaching salaries in adjacent states + ND, 2021/22 NEA data	1.10	1.10	1.10-1.21 Average=1.16
Percent new hires with BA from another state	52%	51%	51%-63% Average = 56%
Past student enrollment change, Fall 2020 to Fall 2021	0.1%	-2.0%	-2.0% – 1.7% Average = .4%
Projected student enrollment growth, Annual rate Fall 2022-Fall 2030		-0.4%	
Percent Teachers 60 and older, 2021/22	7.1%	7.6%	7.1-9.4% Average = 8.4%
Exit Rate all Teachers, 2020/21	11.4%	9.4%	9.4%-11.4% Average = 10.1%
Exit Rate Teachers Ages 60+, 2020/21	32.6%	27.6%	24.1%-32.6% Average = 26.9%
Exit Rate Teachers with < 3 years' experience, 2020/21	13.4%	13.9%	12.1%-13.9% Average = 13.4%
Percent New Hires, 2021/22	10.4%	10.7%	7.1%-10.7% Average = 9.9%

## Current State of Model and Actual Teaching Salaries in Wyoming

**Figure 1** shows that teacher salaries in Wyoming have increased very modestly since 2010. Actual salaries grew by 8 percent from 2010/11 to 2021/22 (or 0.7 percent per year), while model salaries grew at only 2 percent (less than 0.2 percent per year). Currently, actual average regular salaries for teachers are about \$60,800 which exceeds model average salaries (\$54,036) by about 10 percent. The following sections of this report examine whether cost pressures have also remained stable or whether they have increased during the past several years as the growth in salaries has flattened.

**Figure 1: Actual Average Teaching Salaries and Average Teaching Salaries in the Wyoming Funding Model, 2010/11 – 2021/22 School Years**



Source: Wyoming Department of Education staffing files. Model salaries from Wyoming Legislative Service Office.

## INDICATOR 1: Ratio of Teaching Wages to Wages of Comparable Professionals

**DATA SOURCES:** The U.S. Department of Labor reports salaries by occupation in the Occupational Employment and Wage Statistics (OEWS) survey each November and May. This is the most rapidly available source of general employment information, making it useful for monitoring external markets. The OEWS data is a survey of employers only, and it does not include personal characteristics of workers. As a result, these data cannot be used to adjust for workers' characteristics (e.g., work experience, education, hours of work) or benefits. The data in this report come from the May 2021 series, which is the most recent year available.

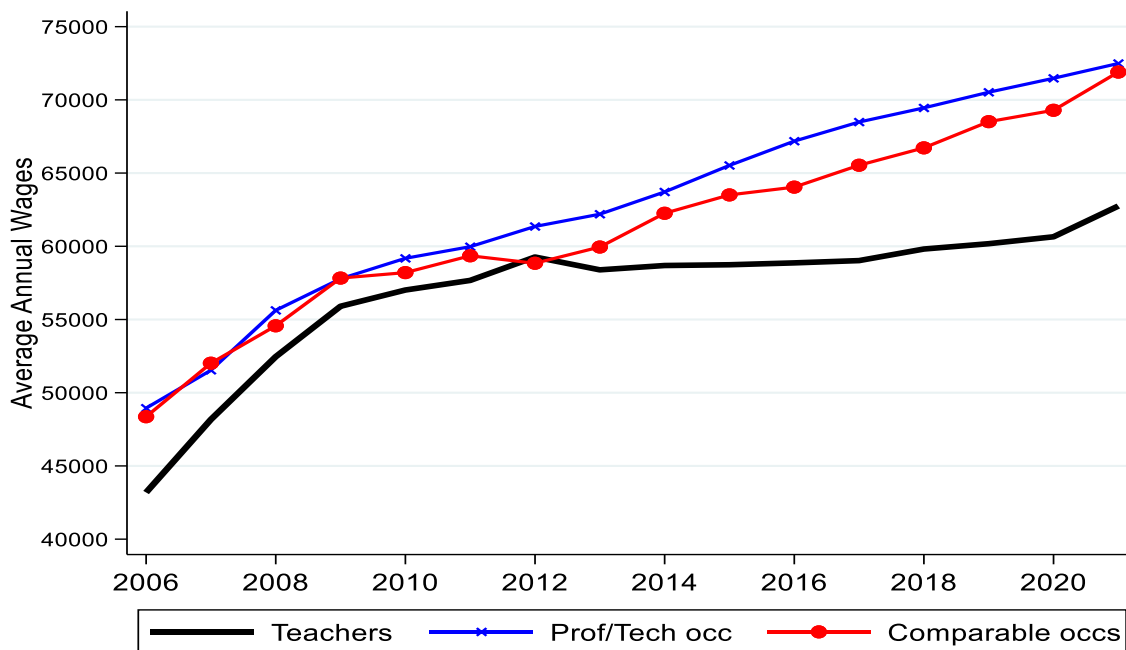
**METRIC:** *Teachers* include all elementary, secondary, and special education teachers. Wages of preschool teachers are not included in the teacher average, as these typically are not public employees. Trends in teaching wages are compared to trends in two other reference groups. *Professional and technical occupations* are defined by OEWS (OCC Codes 11-000 through 29-999). These include occupations in management, business operations, computers, legal professions, health care practitioners, social services, and other skilled profession fields. Occupations in retail or personal services, health care technicians, agricultural or manufacturing workers, food service workers and other similar occupations are not included in the comparison. *Comparable occupations* are defined as the professional and managerial occupations that have skills and attributes most like teaching. These occupations have been identified by the Economic Policy Institute (EPI) based on their analysis of specific skills and attributes of jobs.<sup>1</sup> These occupations are listed in Appendix A.

**FINDINGS:** **Figure 2** reports the trend in annual average wages for teachers, other professional and technical workers, and the EPI defined comparable occupations; these are reported for Wyoming for May 2006 through May 2021. The figure shows that average teaching wages remained relatively flat from May 2012 to May 2021 (average of \$62,750 in May 2021). In contrast, wages in professional and technical occupations experienced a sustained rise. The growth rate in the last 4 years has been between 1 to 2 percent per year, to \$72,486 in May 2021. This sustained wage increase also appears in the narrower set of comparable occupations, with an average salary in May 2021 of \$71,899. (As will be described later, the rise in non-teacher wages from 2021 to 2022 is likely to have been much more rapid.)

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<sup>1</sup> See Allegretto, Corcoran and Mishel (2004) for more details. The U.S. Bureau of Labor Statistics National Compensation Survey reports the skills and attributes of occupations along 10 dimensions including factors such as knowledge required, supervision received, and complexity of the tasks.

**Figure 2: Average Annual Wages for Teachers and Comparable Workers in Wyoming, May 2006 to May 2021**



Source: U.S. Bureau of Labor Statistics May Quarterly Occupational Employment Statistics. All ownerships across all NAICS.

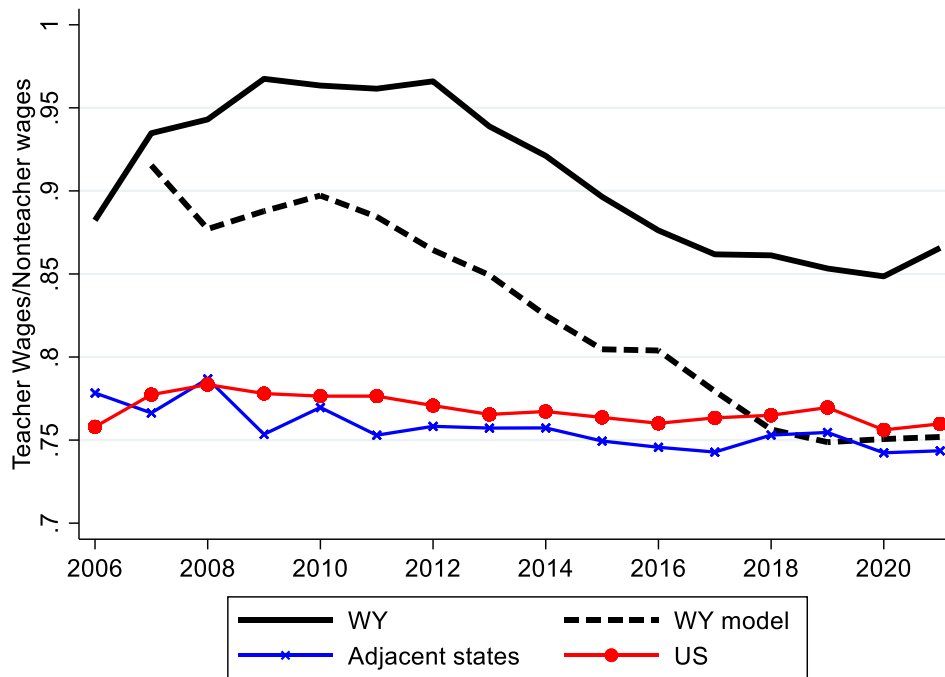
Teaching salaries throughout the U.S. are typically lower than the salaries of other professional workers, in part due to the high levels of retirement and health care benefits in teaching and relatively lower weeks of work compared to other professional workers.<sup>2</sup> According to Census survey data, teachers report working on average 45 weeks per year while non-teachers with bachelor's degrees report working 50 weeks per year.<sup>3</sup>

**Figures 3.1 and 3.2** compare the Wyoming ratio of teaching wages to non-teaching wages to the corresponding ratio in other states. Average wages of teachers in Wyoming as of May 2021 were 87 percent of the average wages in other professional and technical occupations, down from a high of about 96 percent in 2011/12. Although lower than in the past, the wage ratio in Wyoming is high relative to other areas. In the U.S. as a whole, teaching wages are about 76 percent of the wages of other professionals. The ratio in neighboring states is about 74 percent. Note that these ratio are based on actual teaching salaries, not model salaries. The ratio of model salaries to the wages of professional and technical workers as of May 2021 was 75 percent (\$54,503/\$72,486).

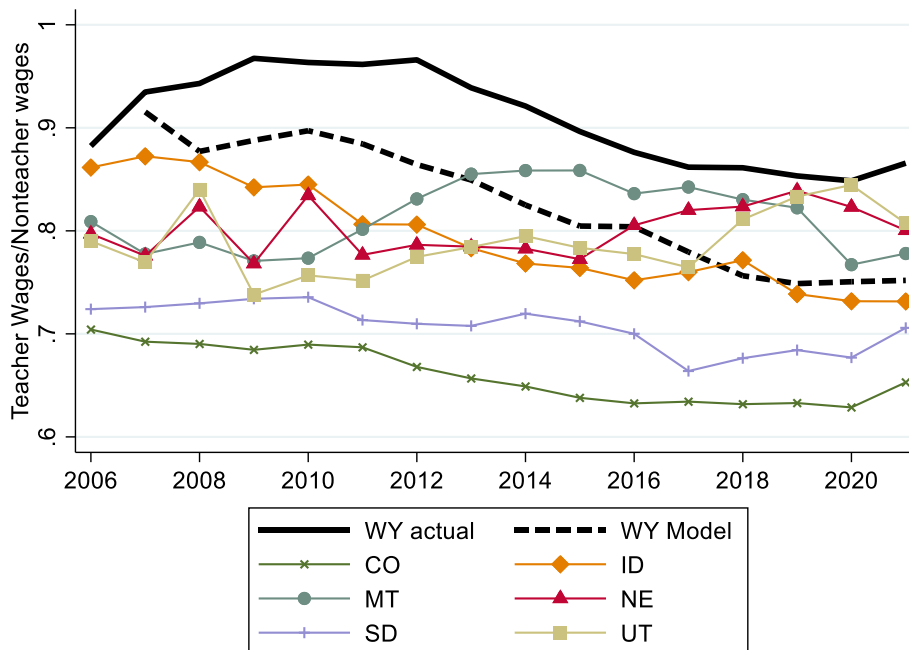
<sup>2</sup> See Podgursky and Tongrut (2006) for more work on this issue.

<sup>3</sup> Author calculations from U.S. Census American Community Survey.

**Figure 3.1: Ratio of Teacher Wages to Wages in Professional/Technical Occupations, Wyoming and Surrounding States, May 2006 to May 2021**



**Figure 3.2: Ratio Disaggregated for Surrounding States, May 2006 to May 2021**



Source: U.S. Bureau of Labor Statistics May Quarterly Occupational Employment Statistics. All ownerships across all NAICS.

The 2022 OEWS wage data for individual occupations have not been released yet. However, other sources show that the 2021 to 2022 period has been characterized by rapid wage growth. According to the Bureau of Labor Statistics, average weekly wages in Wyoming for all workers covered by unemployment insurance rose rapidly from March 2021 to March 2022 by 11.2 percent. This is in striking contrast to the previous March 2020 to March 2021 period, when Wyoming's average weekly wages declined slightly. Wyoming's recent wage growth has been even more rapid than the growth in surrounding states, which was between 7 to 9 percent.

Wage growth for specific educational groups is not yet available by state. National data indicate that median wages for full time workers with a BA or higher grew by 6.9 percent, slightly faster than the overall average growth of 6.7 percent. If Wyoming also followed this national pattern, wage growth of college educated workers in Wyoming would be slightly faster than the state average of 11.2 percent. In contrast, the Wyoming Department of Education (Figure 1 above) and the NEA estimates for Wyoming (Figures 4 and 5 below), report that teaching wages from the 2020/2021 to 2021/22 school years grew by less than 1 percent. This suggests that the previous figures are likely to exhibit a substantial widening between teaching wages and other occupations once all the 2022 data is reported.

**Table 2: Changes in Wages March 2021-March 2022**

Percent Change in Average Weekly Wage	
By state	
U.S.	6.7%
Wyoming	11.2%
Colorado	8.8%
Idaho	8.5%
Montana	8.3%
Nebraska	9.2%
North Dakota	6.9%
Utah	8.2%
By education (National level)	
Median usual weekly earnings of full-time wage and salary workers ages 25+	
BA or higher	6.9%
Some college	2.9%
HS only	4.4%
Less than HS	9.3%

Source: Average weekly wages from Bureau of Labor Statistics Quarterly Census of Employment and Wages. Median usual weekly wages of full-time workers from BLS Current Population Survey.



## Indicator 2: Teaching Salary Trends in Other States

**DATA:** The OEWS data above reported annual average teacher wages by state based on a random sample of employers. The NEA reports average teaching salaries for full time workers based on data reported by state education agencies. This data source is the most current source of teaching salary information across states, with one year of data beyond the OEWS estimates. The NCES uses these wage series in reports of teacher salaries.

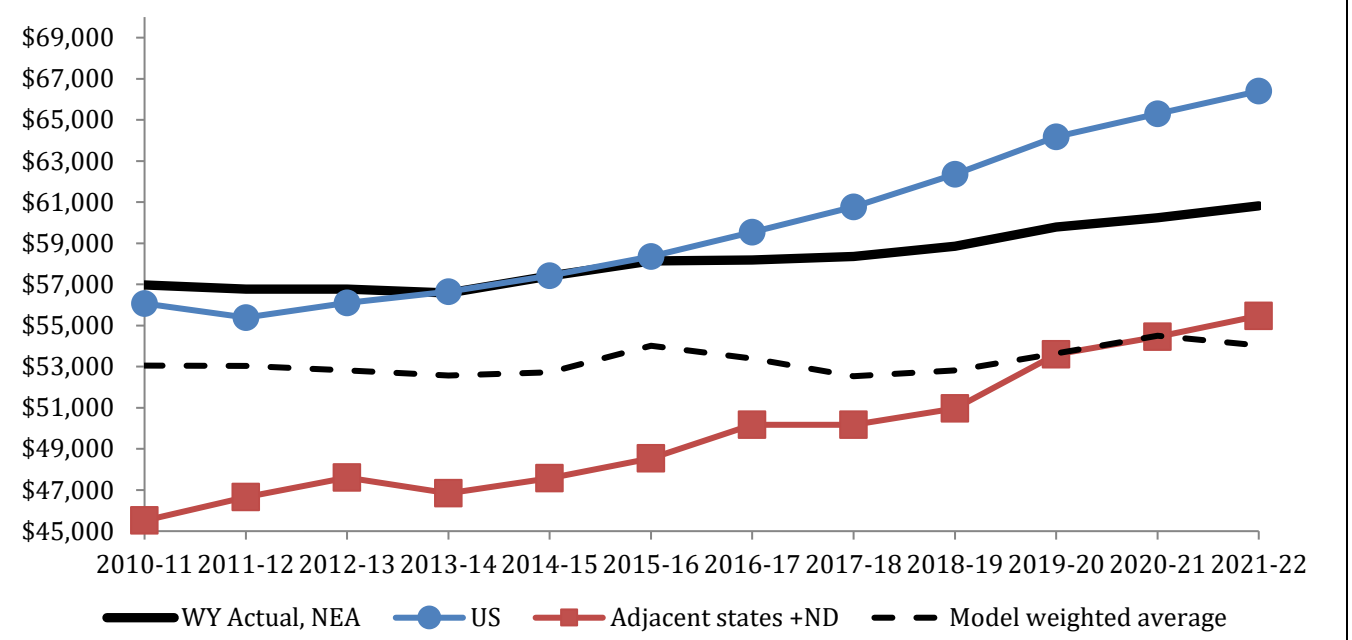
**METRIC:** **Figure 4** reports the average teaching wages in Wyoming, in adjacent states and North Dakota, and in the U.S. as a whole for the 2010/11 through 2021/22 school years. **Figure 5** reports this for the individual states in the region. **Table 3** reports supporting information that also reflects on the competitiveness of teaching in Wyoming; this table reports the fraction of teachers who have a first bachelor's degree from Wyoming or another state.

**FINDINGS:** **Figures 4** and **5** show that actual average teaching salaries in Wyoming tracked average U.S. teaching wages until 2016 school year. For the last six years teaching wages in Wyoming have fallen below the U.S. average. Teaching wages in Wyoming are 10 percent higher than the average for adjacent states and North Dakota. This is significantly below the historical high of a 27 percent premium for Wyoming teachers.

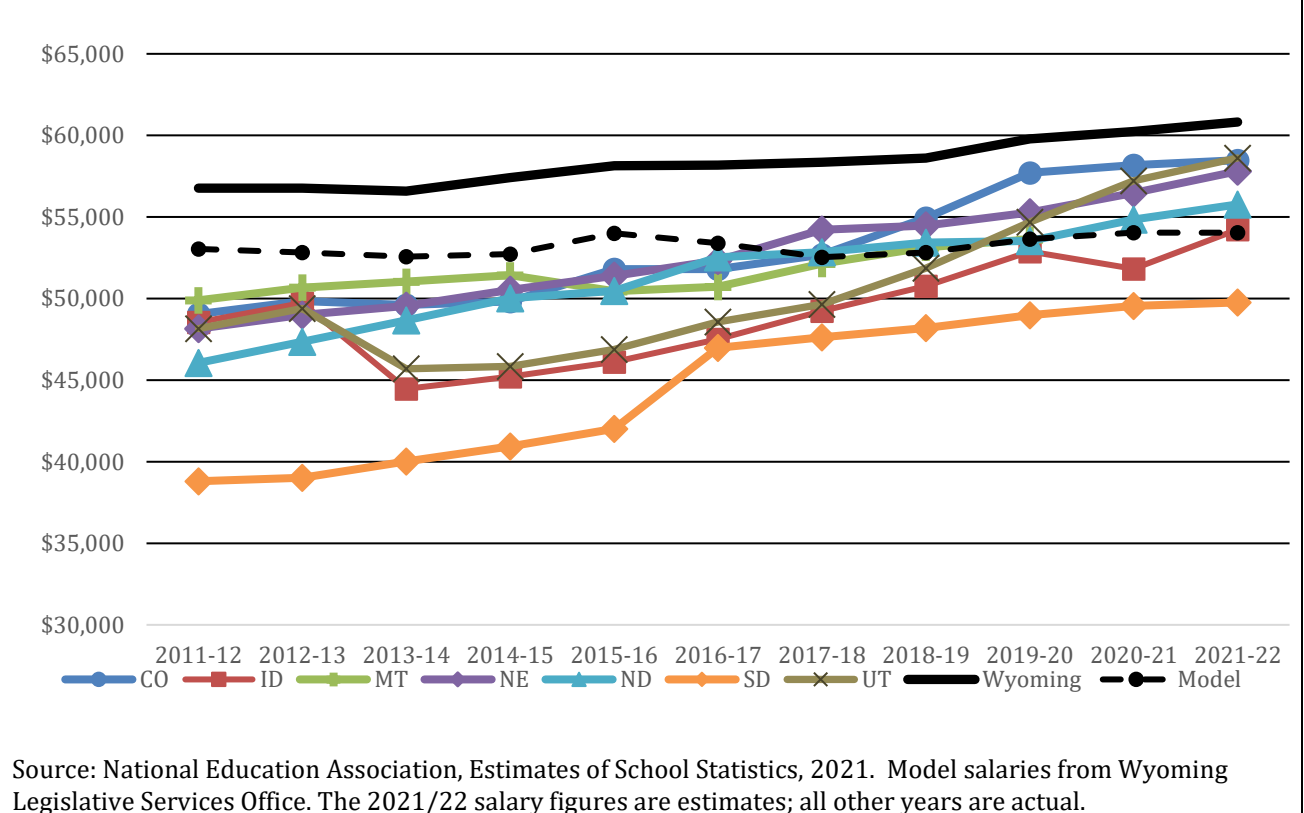
Model salaries lie significantly below the U.S. average. For 2020/21 and 2021/22, model salaries were below the average for adjacent states and North Dakota. (Note that these other states do not have centralized funding models like Wyoming's, so there is no "model salary" in comparison states.)

**Figure 5** presents the trend in teaching salaries in the individual surrounding states and North Dakota. On average across this group of states, salaries have increased by about 2 percent per year for the last two years. In contrast, actual salaries in Wyoming grew by less than 1 percent.

**Figure 4: Average Teacher Salaries in WY and Surrounding States + ND, School Years 2010/11 to 2021/22**



**Figure 5: Average Teacher Salaries in Wyoming and Surrounding States + ND, School Years 2010/11 to 2021/22**



Source: National Education Association, Estimates of School Statistics, 2021. Model salaries from Wyoming Legislative Services Office. The 2021/22 salary figures are estimates; all other years are actual.

### Indicator 3: Trends in Teacher Recruitment and Training

**DATA:** Salary comparisons can help to indicate the relative attractiveness of Wyoming in recruiting a high quality teaching workforce. However, to measure whether this translates into actual hires, data on teacher quality is needed. Research has shown that teachers vary widely in their effectiveness in improving student outcomes, both on test scores and in future educational and labor force attainment. In many states, teacher quality indicators have been developed to measure the effectiveness of individual teachers. At present, Wyoming does not link student outcomes with individual teachers, making it difficult to evaluate whether higher salaries in Wyoming are bringing in more effective teachers.

In the Wyoming Department of Education's fall staffing files, school districts report on the education and training of teachers. Currently, this is one of the only ways to track how the qualifications of new hires compare with those in the past. Previous research has indicated that better student outcomes are correlated with teachers who trained at more selective institutions with better student outcomes.<sup>4</sup> There are particular concerns about the quality of teacher training at for-profit or online universities.<sup>5</sup> While advanced degrees have not generally been found to necessarily be related to student achievement,<sup>6</sup> the percent of new hires with masters' degrees may proxy for the ability of Wyoming to recruit higher quality teachers.

The University of Wyoming provided data on the number and academic background of individuals graduating with degrees in teaching.

#### **METRIC:**

**Table 3** reports the states where new hires obtained their first BA degree and the institutions where teachers obtained their first degree.

**Table 4** reports the number and ACT scores of BA degree graduates in education and other fields from the University of Wyoming.

**Table 5** reports the fraction of new hires with at least a master's degree.

**FINDINGS:** **Table 3** indicates that the percentage being recruited from outside the state has fallen from the previous high of 67 percent in 2011 to a little more than half in 2020.

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<sup>4</sup> For example, see Ballou (1996), Clotfelter, Vigdor and Ladd (2006), Ehrenberg and Brewer (1994), Ferguson and Ladd (1996).

<sup>5</sup> See Fox Garrity (2013) and Lincove, Osborne, Mills and Bellows (2015) for a discussion of the effectiveness of for-profit and online teacher training programs.

<sup>6</sup> Rivkin, Hanushek, and Kain (2005) review some of the evidence on master's degrees.

The bottom panel of **Table 3** reports the original state and institution where recent hires earned their first bachelor's degree. This is reported for hires that earned their first bachelor's degree since 2015. In 2021, 10 or more teachers were hired from 6 universities: University of Wyoming, Western Governor's University, Black Hills State University, Valley City State University, Chadron State University, and Grand Canyon University. These accounted for about 80 percent of the 2017-2021 new hires with a recent BA degree.

**Table 3: Fraction of Wyoming New Hires, by State of First Bachelor's Degree**

Year	From Wyoming	From Adjacent states	Other States
2014	43%	43%	14%
2015	43	42	15
2016	44	40	16
2017	47	40	13
2018	45	40	15
2019	42	43	14
2020	49	39	12
2021	47	37	15
Teachers with BA degree earned in last 5 years Hired 2017-2021 (N=1,886)			
Bachelor's Degree Institution		Percent of 2017-2021 Hires from each institution	
University of Wyoming		46%	
Western Governor's University		11	
Black Hills State University		6	
Valley City State University		5	
Chadron State		4	
Grand Canyon University		2	
1-2% each from Brigham Young University Idaho, University of Northern Colorado, Utah State University			
Other Universities: 26%			

Source: Based on Wyoming Department of Education Contract Files (WDE 602).

An advanced degree is another measure of the education background of newly hired Wyoming teachers. **Table 4** shows that about a third of new hires have a master's degree.

**Table 4: Fraction of Wyoming New Hires with Master's Degrees**

Year Hired	Percent with MA
2010	30.5%
2011	31.6%
2012	32.1%
2013	32.6%
2014	32.5%
2015	37.9%
2016	39.6%
2017	33.4%
2018	34.3%
2019	38.8%
2020	37.7%
2021	32.4%

Source: Based on Wyoming Department of Education Contract Files (WDE 602).

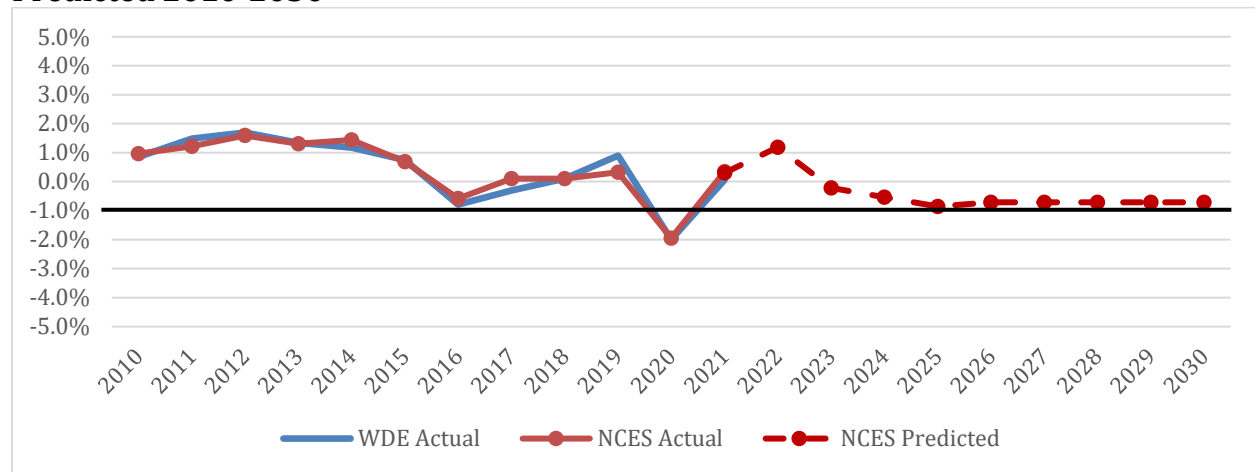
#### Indicator 4: Trend in Student Enrollment

**DATA:** The Wyoming Department of Education reports actual fall enrollment each year. The NCES also releases counts based on a slightly different methodology and produces projections of student enrollment through 2030.<sup>7</sup> These should be interpreted with some caution as all projections are subject to error: a significant change in migration patterns across states, for example, would change these estimates.

**METRIC:** Stress on salary is generated through a combination of how many people are interested in teaching and how many teachers districts need to hire. One source of new positions is rising student enrollment. One source of fewer positions is decreasing student enrollment.

**FINDINGS:** Figure 6 shows the past trends and future projections for student enrollment. Based on NCES projections, student enrollment is predicted to remain stable over the next 2 years and then decline slightly to 2030.

**Figure 6: Trend in Student Enrollment Growth Rate in Wyoming, Actual and Predicted 2010-2030**



Source: National Center for Education Statistics, Digest of Education Statistics.

<sup>7</sup> The Wyoming School Facilities Division also projects student enrollment, but does not adjust for the age profile of the state. The NCES projections incorporate the age structure of the Wyoming population.

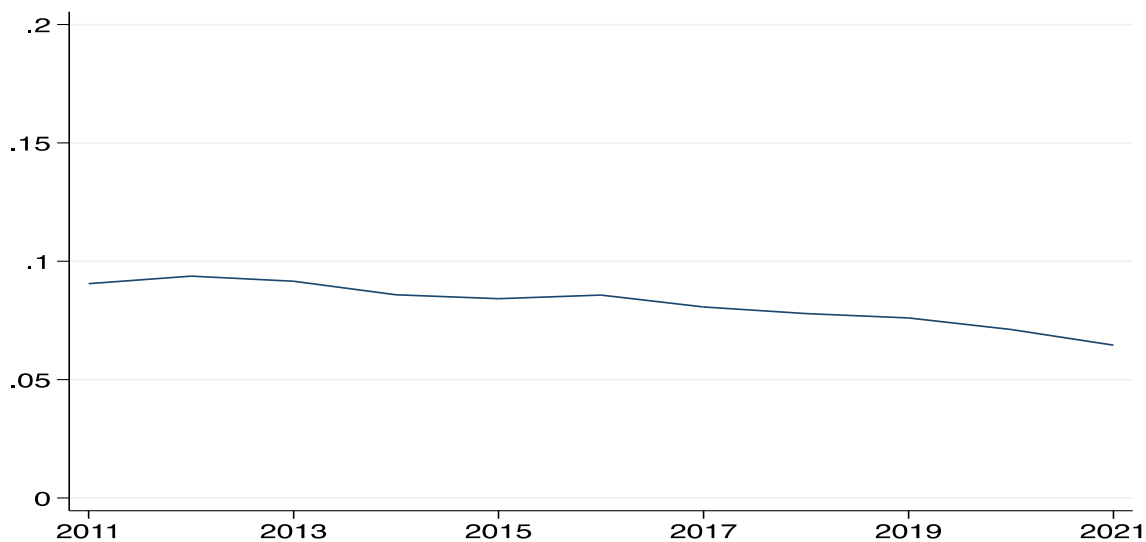
### Indicator 5: Trend in Teacher Retirements

**DATA:** The Wyoming Department of Education Staffing Files (WDE 602) include the age of teachers. By merging these staffing files across years, the data indicate when a teacher of retirement age left teaching.

**METRICS:** **Figure 7** shows fraction of teachers ages 60 and older for 2011/12 through 2021/22

**FINDINGS:** **Figure 7** shows that the percentage of teachers ages 60 and older has been steadily declining. Currently, about 7 percent of teachers are 60 or older. Because of this decline, retirement pressures for the future are expected to be similar to (or slightly lower than) those of the past 5 years. The age profile of teachers has shifted towards younger replacements, reducing replacement pressures due to retirements.

**Figure 7: Fraction of Wyoming Teachers of Age 60+, Fall 2011 – Fall 2021**



Source: Wyoming Department of Education Staffing files (WDE 602).

## Indicator 6: Percent of New Hires

**DATA:** Wyoming Department of Education Staffing Files (WDE 602).

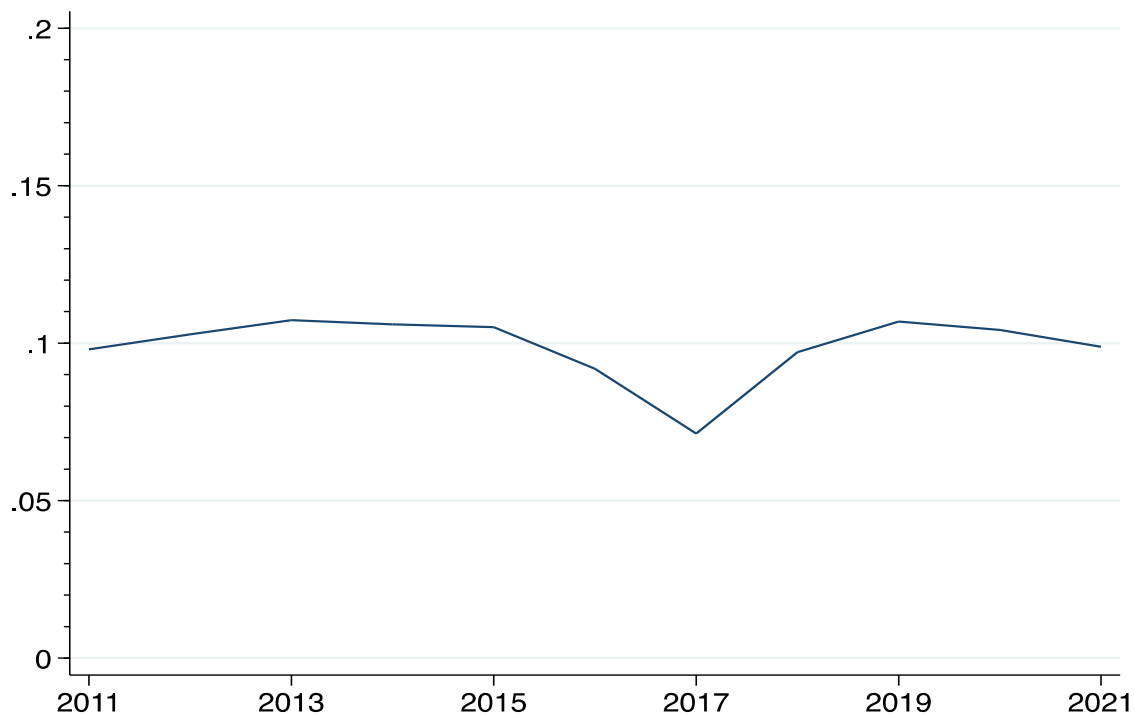
**METRIC:** The net combination of student enrollment, teacher retirements, and teacher exits for other reasons results in the percentage of new hires. Policy changes, like class size reductions, would also influence this percentage. An abrupt increase in the percent of new hires may therefore warrant more monitoring of salaries to ensure that salaries are sufficient to recruit these additional teachers.

New hires in this report are defined as teachers in Wyoming who were not working as a teacher in the previous year. Transfers from one district to another are not counted as new hires. Teachers who left employment for at least a year and then later returned to employment are included in new hires. This is because teachers who were rehired after a year or more of leave would be filling a vacant position.

**Figure 8** reports the past pattern of new hires.

**FINDINGS:** The fraction of teachers who are a new hire ranged between 9 and 11 percent since 2011. The current rate of 10.4 percent remains within the historical range.

**Figure 8: Percent of Wyoming Teachers who are New Hires, Fall 2011-2021**



Source: Wyoming Department of Education Staffing files (WDE 602) Years 2011/12 - 2020/21



## Indicator 7: Retention Rates of Current Teachers

**DATA:** Wyoming Department of Education Staffing Files (WDE 602).

**METRIC:** Some turnover is inevitable, and even desirable, as it takes some experience in the classroom to determine if teaching is a good fit, and retaining less effective teachers is not an optimal outcome. Nevertheless, a sizable increase in turnover rates could indicate changing labor market conditions for teachers.

Exits in this report are defined as teachers in Wyoming who were not working as a teacher in the subsequent year. Transfers from one district to another are not counted as exits. Teachers who left employment for at least a year and then later returned to employment would be counted as an exit in the year they first left. This definition is used because an exit of a year or more leads to a position that districts need to fill.

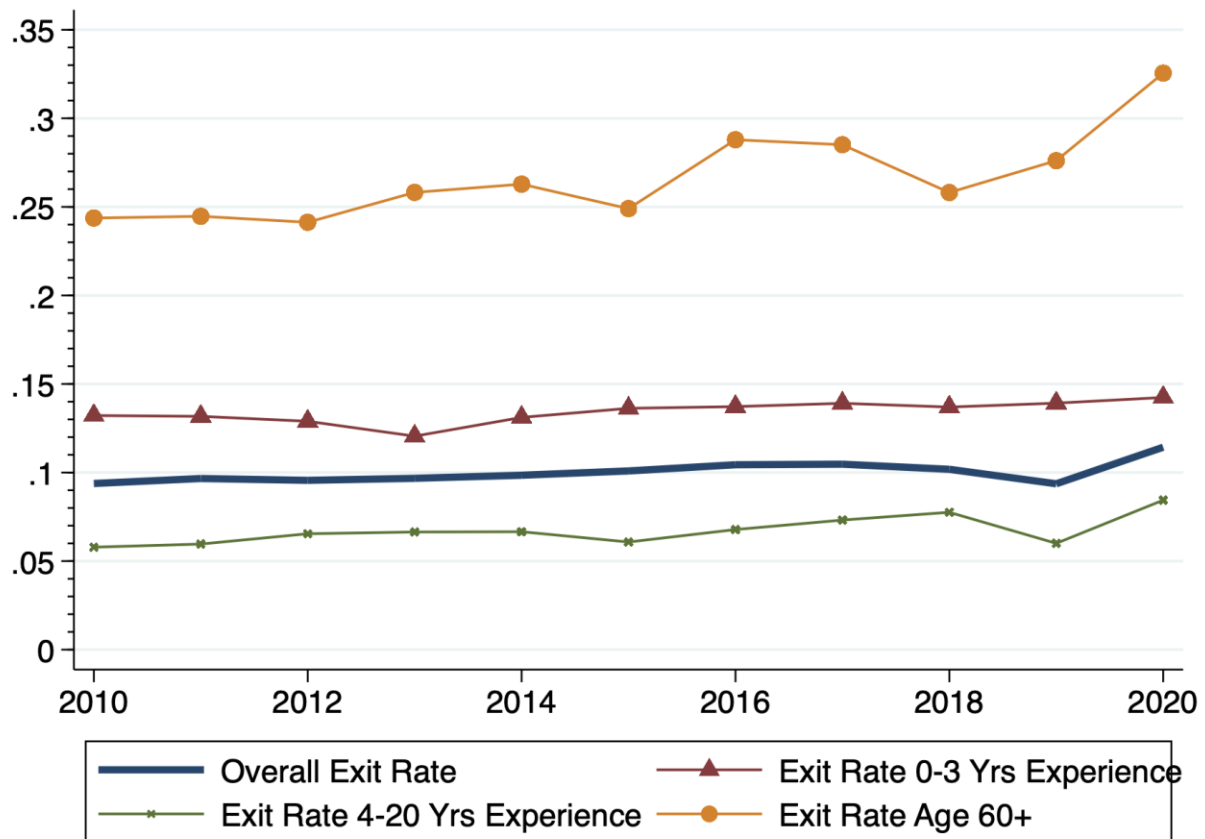
Some individuals have more than one occupational assignment. Following OEWS guidelines, this analysis only includes individuals where teaching was the occupation that required the highest level of skill. For example, if an individual was a teacher and an assistant principal, he or she would be coded as an assistant principal. An individual whose assignment changed to include an administrative component would therefore be counted as an “exit.”

**FINDINGS:** Figure 9 shows that exit rates exhibit a slight increase since 2010/11. Current exit rates are about 11 percent. The exit rate for new teachers (less than 3 years of experience) is about 13 percent, which has remained stable since 2015/16. One notable discrepancy in this last year was the relatively high exit rate for older teachers. Between the 2020/21 and 2021/22 school years, about 33 percent of teachers ages 60 and older exited, as opposed to 28 percent in the previous year. Note that this is also consistent with the steep decline in labor force participation of all workers aged 55 and older over this period reported by the Bureau of Labor Statistics.<sup>8</sup>

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<sup>8</sup> <https://fred.stlouisfed.org/graph/?g=Tqaj>

**Figure 9: Percent of Wyoming Teachers Exiting the Profession, 2010/11 - 2020/21**



Source: Wyoming Department of Education Staffing Files (WDE 602).

One concern around the country is whether exits are leading to teacher shortages. According to one recent study, Wyoming is one of 13 states with no data on teacher vacancies, making it difficult to assess the extent of shortages or to compare Wyoming to other states (Nguyen et al 2022). The companion report “An Overview of State Policies to Improve Teacher Recruitment and Retention” (Stoddard 2022) provides some information about state data reporting options to provide more information on shortages.

## The Pipeline for Future Teachers

**DATA:** University of Wyoming reports the number of individuals majoring in education and awarded a BA in education in each year. All states now report both traditional and alternative teacher certification programs for Title II of the Federal Higher Education Act. These are reported to the Department of Education. States report the number of individuals enrolled in teacher preparation programs, the number of completers, the number of individuals taking teacher certification exams, and the number passing the exams. These are reported in October for the previous year.

**METRIC:** An increasing national conversation concerns the “pipeline” for future teachers.

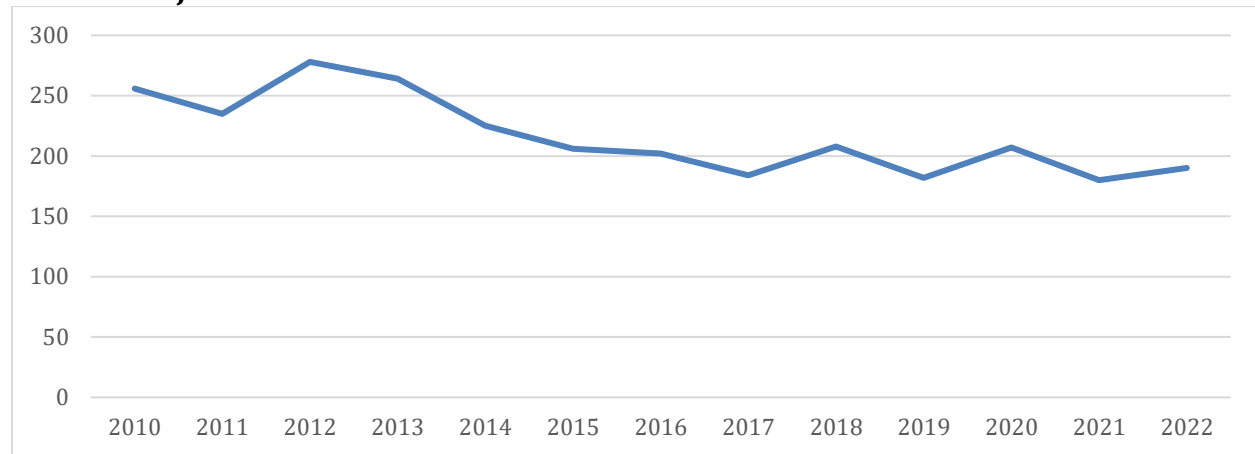
In Wyoming, the only teacher preparation program is the traditional coursework-based program at the University of Wyoming. Some other states also have alternative programs for teacher certification, some of which are sponsored by institutes of higher education (IHE) and some which are not. For example, the University of Northern Colorado has both a traditional and an alternative teacher preparation program. Boulder Journey School only offers an alternative teacher preparation program. This is a residency-based program for individuals who work in Colorado schools for a year under a mentor teacher, and are then awarded Master’s degrees through the University of Colorado and a teaching license after passing the licensure exam.

Note that this is not the only *pathway* to certification in Wyoming. However, the University of Wyoming is the only reported teacher preparation *program*. The comparisons below from the Title II data are only for program completers.

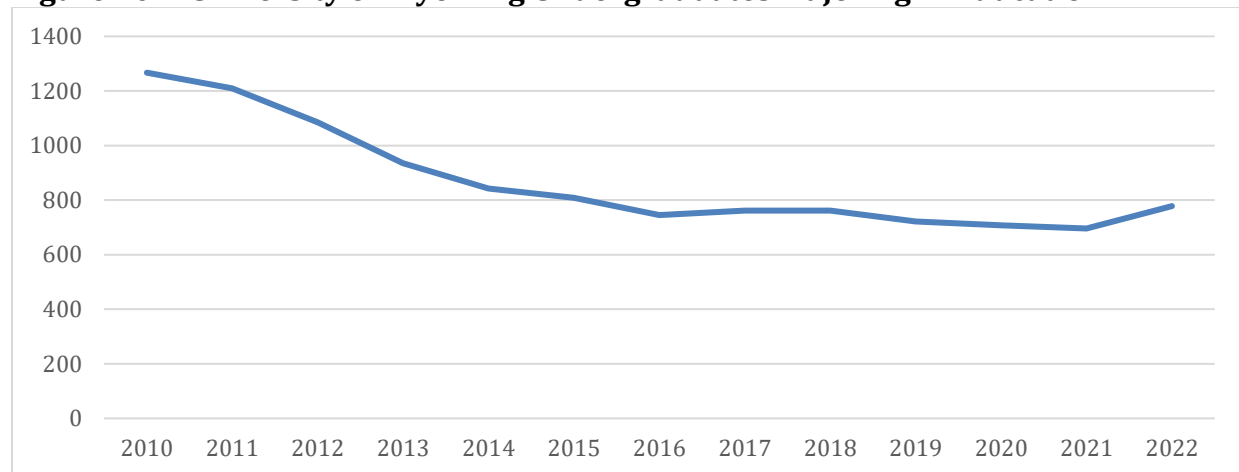
### FINDINGS:

**Table 5** and the accompanying **Figures 10A and 10B** show that the number students with education degrees from the University of Wyoming has fallen over time. In 2021, 190 students were awarded BA degrees in education, an increase from the previous year of 180. Education degrees are about a fourth of the number of students majoring in education with a slight lag. **Figure 6B** shows number of students majoring in education fell rapidly from 2010 through 2016 and has had a more modest decline since, and an uptick from 696 in 2021 (the lowest year in the 2010-2022 period) to 778 (the highest number since 2015).

**Figure 10A: University of Wyoming Bachelor's Degrees Awarded in All Education Related Majors**



**Figure 10B: University of Wyoming Undergraduates Majoring in Education**



Source: University of Wyoming Banner Information System. Degrees and majors in education include a CIP code of 13.

**Table 5** compares education majors and graduates with other graduates from the University of Wyoming. The fraction of graduates with education degrees has fallen from 14 percent in 2010 to 9 percent in 2022. It shows that while education graduates tend to have ACT scores that are on average 1 to 2 points lower than the average University of Wyoming graduate, but that this has not changed over time.

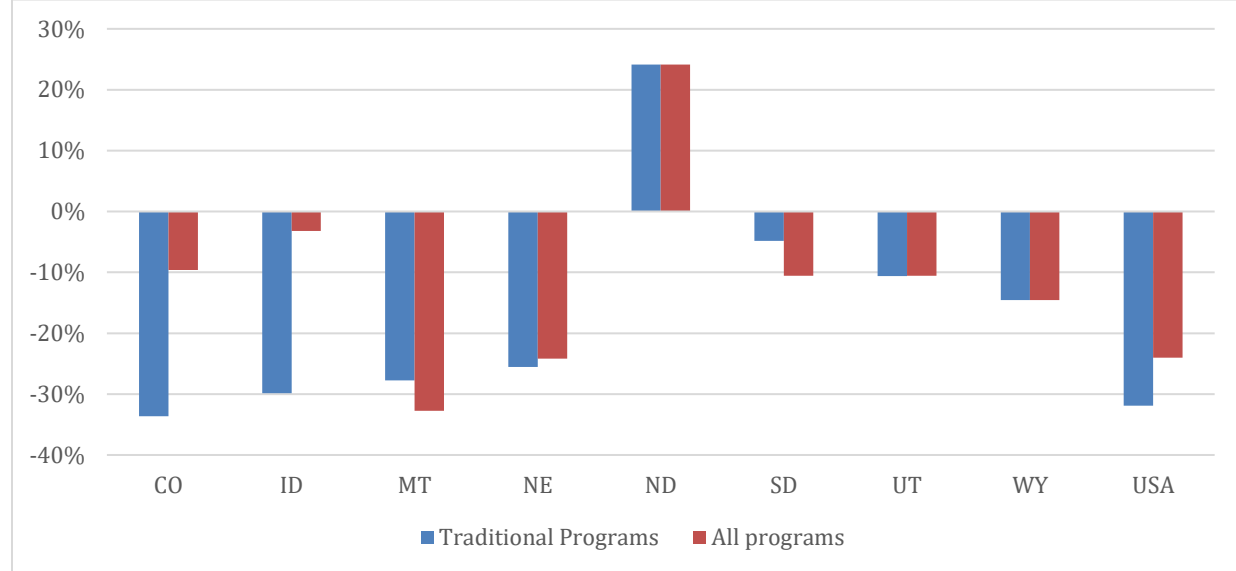
**Table 5: Bachelor's Degree graduates from the University of Wyoming**

Year	Education BA Degrees Awarded	All UW BA Degrees	Ed as Percent of Degrees	Avg ACT for Education Graduates	Avg ACT for All Graduates
2010	256	1,783	14.4%	21.7	23.4
2011	235	1,853	12.7%	23	23.9
2012	278	2,062	13.5%	22.9	24.1
2013	264	2,053	12.9%	23.2	24.1
2014	225	2,007	11.2%	22.3	23.8
2015	206	2,022	10.2%	23.2	24.0
2016	202	2,159	9.4%	22.7	24.2
2017	184	2,204	8.3%	23.0	24.4
2018	208	2,127	9.8%	22.7	24.4
2019	182	2,228	8.2%	23	24.5
2020	207	2,295	9.0%	23	24.6
2021	180	2,205	8.2%	23.6	24.6
2022	190	2,118	9.0%	22.8	24.4

Source: University of Wyoming Banner Information System. Degrees in education include a CIP code of 13.

How does Wyoming compare with other states in terms of the pipeline for future teachers? **Figure 11** shows that most states have seen significant declines in the number of teacher preparation program completers since 2011. Wyoming's decline of about 15 percent is smaller than the national average of about 25 percent. However, the fall has been smaller in South Dakota and Utah. North Dakota has seen increases in completers over this period. Furthermore, Wyoming does not have an alternative certification path. When alternative completers are included, the decline in Wyoming is greater than in all surrounding states except Montana and Nebraska.

**Figure 11 Change completers of teaching preparation programs, 2011/12 – 2019/20**

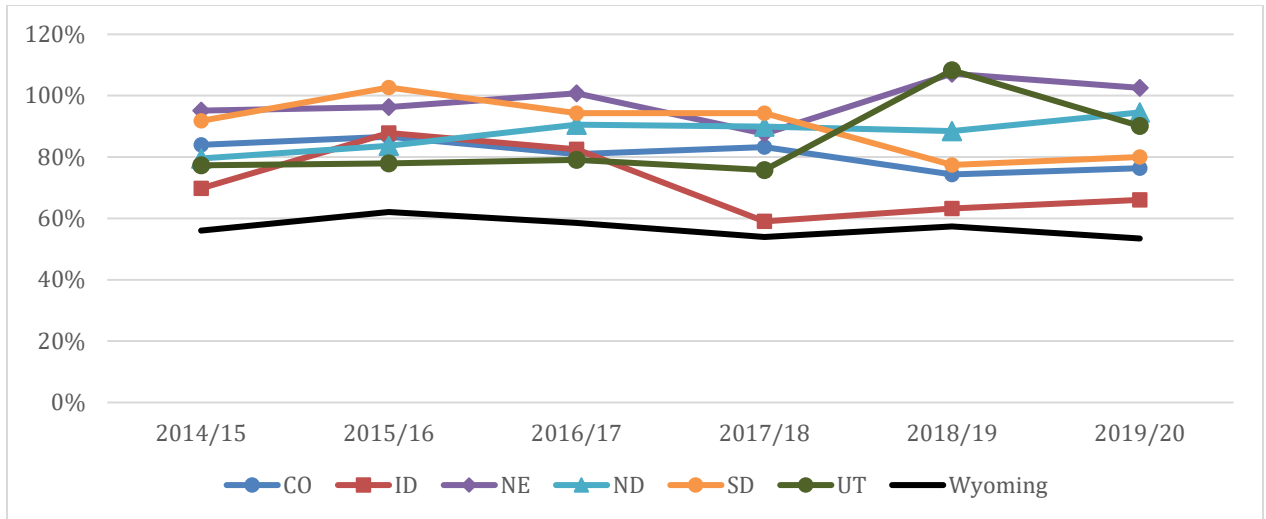


Source: US Department of Education. <https://title2.ed.gov/Public/Home.aspx>. Accessed 9/16/2022

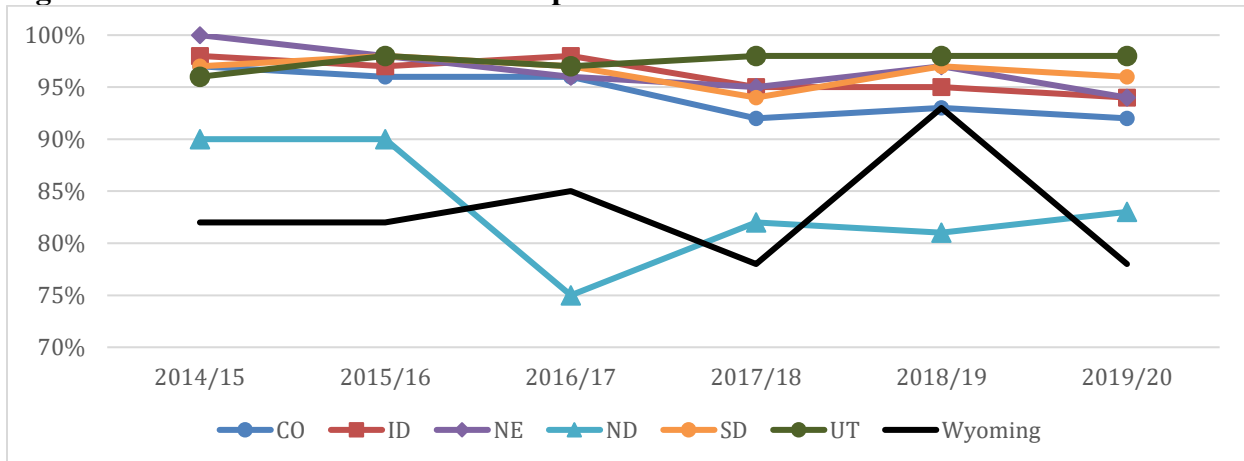
Completers of teacher preparation programs do not always become certified. Certification requires passing an exam, usually the PRAXIS exam. Completers from programs located in the state as well as individuals from other states can sit for the certification exam. Title II data report the number of individuals who sit for the exam and the number who pass. These data have only been reported since 2014/15.

Wyoming has the lowest ratio of individuals who sit for the exam relative to the number of completers compared to all surrounding states. Wyoming also has one of the lowest pass rates, similar to the rate in North Dakota, but lower than other states. These factors combined mean that Wyoming has far fewer teachers passing the certification exam relative to the number of completers from the state. These findings are shown in **Figure 12** below.

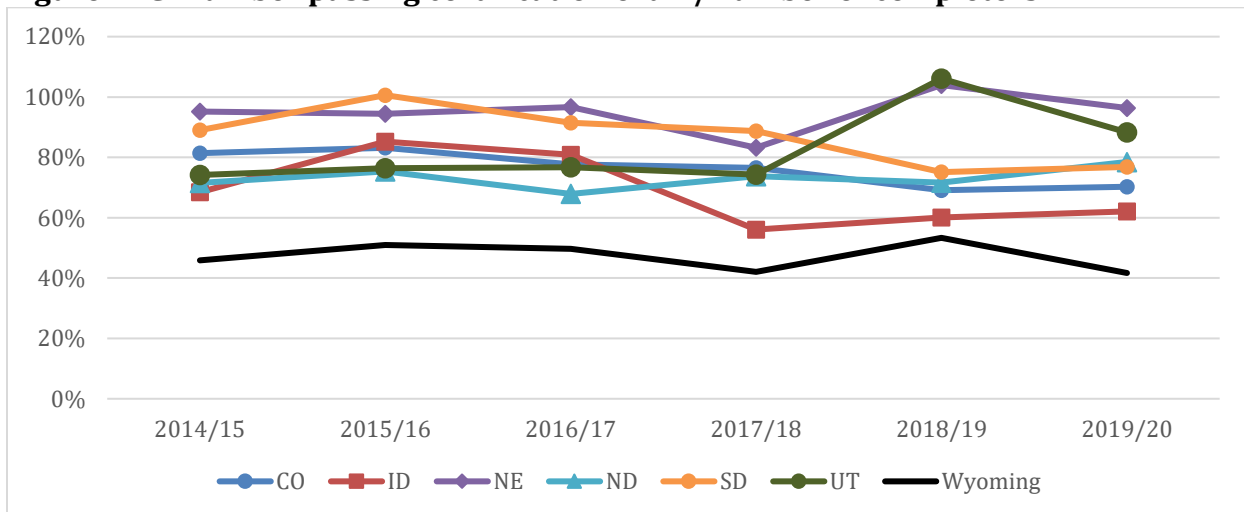
**Figure 12A: Exam takers relative to program completers**



**Figure 12B: Teacher certification exam pass rates**



**Figure 12C: Number passing certification exam/Number of completers**



Source: US Department of Education. <https://title2.ed.gov/Public/Home.aspx>. Accessed 9/16/2022. Montana did not report exam data.

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## **Appendix A: Comparable Professional and Technical Occupations**

Teacher salaries reported in the Occupational Employment Statistics are compared to the salaries of other professional and technical occupations. These include occupation in the following categories:

- Management Occupations (11-0000)
- Business and Financial Operations Occupations (13-0000)
- Computer and Mathematical Science Occupations (15-0000)
- Architecture and Engineering Occupations (17-0000)
- Life, Physical, and Social Science Occupations (19-0000)
- Community and Social Services Occupations (21-0000)
- Legal Occupations (23-0000)
- Education, Training and Library Occupations (25-0000) excluding elementary, secondary, and special education teachers (25-2012 through 25-2054)
- Arts, Design, Entertainment, Sports, and Media Occupations (27-0000)
- Healthcare Practitioner and Technical Occupations (29-0000)

The Economic Policy Institute (EPI) identified professional and managerial occupations that it determined to be similar to teaching based on Bureau of Labor Statistic skill ratings. These occupations are:

- Accountants and auditors
- Underwriters
- Personnel training and labor relations specialists
- Inspectors and compliance officers, except construction
- Architects
- Forestry scientists
- Conservation scientists
- Registered nurses
- Occupational therapists
- Physical therapists
- Educational, Guidance, and Career Counselors and Advisors
- Archivists and curators
- Clergy
- Technical writers
- Editors and reporters, news analysts, journalists
- Computer programmers

## Appendix B: Data Used in the Figures

**Figure 1: Actual Average Annual Wages and Weighted Teacher Model Salaries in Wyoming, 2010/11 to 2021/22**

School Year	Actual Average Salary	Model Weighted Average
2010/11	\$56,105	\$53,046
2011/12	\$56,775	\$53,036
2012/13	\$56,775	\$52,824
2013/14	\$56,583	\$52,567
2014/15	\$57,414	\$52,724
2015/16	\$58,140	\$54,010
2016/17	\$58,187	\$53,387
2017/18	\$58,352	\$52,535
2018/19	\$58,827	\$52,819
2019/20	\$59,674	\$53,648
2020/21	\$60,071	\$54,503
2021/22	\$60,809	\$54,036
2022/23		\$53,506 (estimated)

Source: Wyoming Department of Education staffing files. Model salaries from Wyoming Legislative Service Office. Teachers in calculated actual average include only those with regular K-12 classroom assignments. Salaries include only regular salary.

**Figure 2: Average Annual Wages for Teachers and Comparable Workers in Wyoming, May 2011 to May 2021**

School Year	Teachers	Comparable Occupations		Professional and Technical Workers	
	Average Wage	Average Wage	Ratio Teaching/ Comparable	Average Wage	Ratio Teaching/ Prof & Tech
2010/11	\$57,669	\$59,352	97.2%	\$59,976	96.2%
2011/12	\$59,268	\$58,842	100.7%	\$61,355	96.6%
2012/13	\$58,390	\$59,950	97.4%	\$62,194	93.9%
2013/14	\$58,687	\$62,255	94.3%	\$63,713	92.1%
2014/15	\$58,739	\$63,507	92.5%	\$65,523	89.6%
2015/16	\$58,867	\$64,041	91.9%	\$67,182	87.6%
2016/17	\$59,023	\$65,536	90.1%	\$68,488	86.2%
2017/18	\$59,814	\$66,723	89.7%	\$69,452	86.1%
2018/19	\$60,175	\$68,512	87.8%	\$70,522	85.3%
2019/20	\$60,650	\$69,289	87.5%	\$71,472	84.9%
2020/21	\$62,751	\$71,899	87.3%	\$72,486	86.6%
Average	\$57,488	\$61,473	93.7%	\$63,143	91.4%

Source: Bureau of Labor Statistics May Quarterly Occupational Employment Statistics. All ownerships across all NAICS.

**Figure 3: Ratio of Teacher Wages to Wages in Professional/Technical Occupations, Wyoming and Other States, May 2011 to May 2021**

School Year	Ratio in Wyoming	Ratio in Surrounding States	Ratio in United States
2010/11	0.96	0.75	0.78
2011/12	0.97	0.76	0.77
2012/13	0.94	0.76	0.77
2013/14	0.92	0.76	0.77
2014/15	0.90	0.75	0.76
2015/16	0.88	0.75	0.76
2016/17	0.86	0.74	0.76
2017/18	0.86	0.76	0.76
2018/19	0.853	0.75	0.77
2019/20	0.849	0.742	0.76
2020/21	0.893	0.743	0.76
Average	0.91	0.76	0.77

Source: Bureau of Labor Statistics May Quarterly Occupational Employment Statistics. All ownerships across all NAICS.

**Figures 4 and 5: Average Teacher Salaries in WY and surrounding states Plus ND, 2010/11 to 2021/22**

Year	WY	US	CO	ID	MT	NE	ND	SD	UT
2010/11	\$56,978	\$56,069	\$49,938	\$47,416	\$47,132	\$47,521	\$44,807	\$35,201	\$46,571
2011/12	\$56,774	\$55,389	\$49,049	\$48,551	\$47,839	\$48,154	\$46,058	\$38,804	\$48,159
2012/13	\$56,775	\$56,103	\$49,844	\$49,734	\$48,855	\$48,997	\$47,344	\$39,018	\$49,393
2013/14	\$56,583	\$56,648	\$49,615	\$44,465	\$49,893	\$49,539	\$48,666	\$48,666	\$45,695
2014/15	\$57,414	\$57,420	\$49,828	\$45,218	\$50,670	\$50,525	\$50,025	\$50,025	\$45,848
2015/16	\$58,140	\$58,353	\$51,233	\$46,122	\$51,034	\$51,386	\$51,223	\$42,025	\$46,887
2016/17	\$58,187	\$59,660	\$51,808	\$47,504	\$51,422	\$52,338	\$52,968	\$46,979	\$48,576
2017/18	\$58,352	\$60,477	\$52,701	\$49,225	\$50,449	\$54,213	\$52,850	\$47,631	\$49,655
2018/19	\$58,861	\$62,355	\$54,935	\$50,757	\$50,721	\$54,470	\$53,434	\$48,204	\$51,858
2019/20	\$59,786	\$64,133	\$57,706	\$52,875	\$52,135	\$55,267	\$53,525	\$48,984	\$54,678
2020/21	\$60,357	\$65,090	\$60,611	\$51,817	\$52,894	\$56,463	\$54,837	\$49,993	\$56,918
2021/22	\$60,820	\$66,397	\$58,481	\$54,232	\$53,628	\$57,804	\$55,769	\$49,761	\$58,619

Source: National Education Association, Estimates of School Statistics, 1959-60 through 2021-22. The 2021/22 figures are estimates.

**Figure 6: Faction of New Hires with First BA Degree from Outside Wyoming, Fall 2007 to 2020**

School Year	Fraction from Outside WY
2007	60%
2008	56%
2009	64%
2010	64%
2011	67%
2012	61%
2013	63%
2014	54%
2015	56%
2016	56%
2017	53%
2018	54%
2019	58%
2020	51%
2021	52%
Period Average	58%

Source: Based on Wyoming Department of Education Contract Files (WDE 602).

**Figure 7: Trend in Student Enrollment in Wyoming, 2000-2029**

<b>Fall</b>	<b>Enrollment</b>	<b>Growth Rate</b>	<b>Projection Status</b>
2000	89,531		Actual Growth
2001	87,897	-1.8%	Actual
2002	86,117	-2.0%	Actual
2003	84,741	-1.6%	Actual
2004	83,772	-1.1%	Actual
2005	83,705	-0.1%	Actual
2006	84,629	1.1%	Actual
2007	85,578	1.1%	Actual
2008	86,519	1.1%	Actual
2009	87,420	1.0%	Actual
2010	88,165	0.9%	Actual
2011	89,476	1.5%	Actual
2012	90,993	1.7%	Actual
2013	92,218	1.3%	Actual
2014	93,303	1.2%	Actual
2015	94,002	0.7%	Actual
2016	93,261	-0.8%	Actual
2017	92,976	-0.3%	Actual
2018	93,029	0.1%	Actual
2019	93,832	0.9%	Actual
2020	91,938	-2.0%	Actual
2021	91,992	0.1%	Actual
2022	92,700	0.8%	Projected
2023 to 2030	91,500	-0.2%	Projected Annual Change

Source: Wyoming Department of Education Actual Enrollment for Fall 1990-2021. Projected Enrollment 2022-2030 from National Center for Education Statistics, Digest of Education Statistics.

**Figure 8: Fraction of WY Teachers of Age 60+, 2011/12 to 2021/22**

<b>Year</b>	<b>Percent of Teachers 60+</b>	<b>Exit rate of Teachers 60+</b>
2011/12	9.2%	24.4%
2012/13	9.4%	24.5%
2013/14	9.2%	24.1%
2014/15	8.6%	25.8%
2015/16	8.5%	26.3%
2016/17	8.6%	25.0%
2017/18	8.2%	29.2%
2018/19	7.9%	28.5%
2019/20	7.6%	25.8%
2020/21	7.1%	27.9%
2021/22	6.5%	32.6%
Period Average	8.25%	26.9%

Source: Wyoming Department of Education Staffing files (WDE 602)

**Figure 9: Percent of Wyoming Teachers who are New Hires, Fall 2011-2021**

<b>Year</b>	<b>Hire Rate</b>
2011/12	7.9%
2012/13	9.7%
2013/14	10.2%
2014/15	10.6%
2015/16	10.5%
2016/17	10.4%
2017/18	9.2%
2018/19	7.2%
2019/20	9.7%
2020/21	10.7%
2021/22	10.4%
Period Average	9.9%

Source: Wyoming Department of Education Staffing files (WDE 602)



**Figure 10: Percent of Wyoming Teacher Exiting the Profession, 2010/11 – 2020/21**

<b>Year</b>	<b>All teachers</b>	<b>Less than 3 Years Experience</b>	<b>Midcareer (4-20 years exp.)</b>
2010/11	9.5%	13.4%	5.9%
2011/12	9.7%	13.3%	6.0%
2012/13	9.6%	13.0%	6.6%
2013/14	9.8%	12.1%	6.8%
2014/15	10.0%	13.2%	6.8%
2015/16	10.1%	13.6%	6.2%
2016/17	10.4%	13.7%	6.9%
2017/18	10.5%	13.9%	7.4%
2018/19	10.2%	13.7%	8.0%
2019/20	9.4%	13.9%	6.0%
2020/21	11.4%	13.4%	8.4%
Period Average	9.9%	13.4%	6.8%

Source: Wyoming Department of Education Staffing files (WDE 602)